

Claims

[c1]

A method for operating a pre-crash sensing system for a first vehicle proximate a second vehicle a counter-measure system comprising:
generating an object detection signal over a field of view from a first vehicle;
receiving the object detection signal at the second vehicle when positioned within the field of view;
generating a response signal in response to said high frequency signal, said response signal including a key;
establishing a communication link between said first vehicle and said second vehicle using said key;
communicating a first vehicle data signal to the second vehicle using said key;
and
communicating a second vehicle data signal to the second vehicle using said key.

[c2]

2.A method as recited in claim 1 wherein entering the first vehicle information into the second vehicle threat registry and classifying ranking the first vehicle information within the registry.

[c3]

3.A method as recited in claim 2 wherein classifying comprises classifying the first vehicle information as an imminent threat.

[c4]

4.A method as recited in claim 3 further comprising allocating a system resource in response to the imminent threat.

[c5]

5.A method as recited in claim 1 further comprising communicating the second vehicle threat registry to a third vehicle adjacent to the second vehicle.

[c6]

6.A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating a first position of the first vehicle.

[c7]

7.A method as recited in claim 1 wherein communicating a second vehicle data signal comprises communicating a second position of the second vehicle.

[c8]

8.A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating a first heading information of the first vehicle.

- [c9] 9.A method as recited in claim 1 wherein communicating a second vehicle data signal comprises communicating second heading information of the second vehicle.
- [c10] 10.A method as recited in claim 1 wherein communicating a first vehicle data signal comprises communicating first trajectory information of the first vehicle to the second vehicle.
- [c11] 11.A method as recited in claim 1 further comprising classifying a threat level as a function of the first vehicle trajectory.
- [c12] 12.A method as recited in claim 1 further comprising activating a counter-measure system in response to the threat level.
- [c13] 13.A method as recited in claim 1 wherein said vehicle information comprises heading and speed.
- [c14] 14.A method for operating a pre-crash sensing system for a first vehicle proximate a second vehicle a counter-measure system comprising:
establishing a communication link between said first vehicle ^{and} a plurality of vehicles ^{using} a communication key;
communicating a vehicle data to the first vehicle from the plurality of vehicles;
and
entering the vehicle data into the first vehicle threat registry;
ranking the vehicle data by vehicle within the registry in one of a plurality of classes.
- [c15] 15.A method as recited in claim 14 further comprising ranking some as the vehicle data as an imminent threat.
- [c16] 16.A method as recited in claim 14 further comprising allocating a system resource in response to the imminent threat.
- [c17] 17.A method as recited in claim 14 further comprising estimating a time to impact.
- [c18] 18.A method as recited in claim 14 further comprising activating an avoidance

countermeasure when the time to impact is greater than a time threshold.

[c19] 19.A method as recited in claim 14 further comprising activating an impact countermeasure when the time to impact is less than a time threshold.

[c20] 20.A method as recited in claim 14 wherein generating a vehicle data signal comprises generating a vehicle type signal, a vehicle weight signal or a vehicle size signal.

[c21] 21.A system for sensing a potential collision of a first vehicle with a second vehicle that transmits a second vehicle information signal, said first vehicle having a pre-crash sensing system comprising:
a threat registry;
a position sensor generating a first position signal corresponding to a position of the first vehicle;
a first sensor generating sensor signals from the first vehicle;
a receiver receiving the second vehicle position signal from the second vehicle;
a countermeasure system;
a controller coupled to the threat registry, the position sensor, the first sensor, the receiver, and said counter measure system, said controller determining a time to collision and a distance to collision in response to the second vehicle information, the first position signal and the second vehicle position, said controller determining a threat level as a function of the time to collision and the distance to collision, activating the countermeasure system in response to the threat level and storing the vehicle and threat level in the threat registry.

[c22] 22.A system as recited in claim 21 wherein said controller comprises system resources, said controller allocating system resources in response to said threat level.

[c23] 22.A system as recited in claim 21 wherein said counter measure system comprises avoidance countermeasures and mitigation countermeasures, said controller choosing to activate said avoidance countermeasures or mitigation countermeasures in response to said threat level.